Job Risk Analysis

Name(s) of Risk Team Members: E. Lessard and D. Passarello	Point Value → Parameter ↓	1	2	3	4	5
Job Title: Vacuum System Work Job Number or Job Identifier: JRA 10	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Job Description: Bake-out of accelerator vacuum systems.	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
Training and Procedures List (optional): See Vacuum Group procedures Approved by: *E. Lessard* Date: 6-15-04 Rev. #: 0	Likelihood (D)	Impossible	Unlikely	Possible	Probable	Multiple

Stressors (if applicable, please list all):	Reason for Revision (if applicable):	Comments:

			Before Additional Controls							After Additional Controls						
Job Step / Task	Hazard	Control(s)	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	Control(s) Added to Reduce Risk	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	% Risk Reduction
Equipment Setup (Moving heavy equipment from shop to RHIC or Booster)	Overexertion – injuries caused by excessive lifting, pushing, pulling, holding, or carrying of an object	Equipment on wheels, lift gate on step van, back safety training, use of squat lift technique, use of team lift, use of mechanical devices to assist in lift	N	2	2	3	3	36								
Equipment Setup (Slip on ramps or wet surfaces in RHIC or Booster)	Falls on same level	Slip resistant footwear (e.g., steel toe sneakers), housekeeping rules	N	2	2	4	3	48								
Equipment Setup (Lifting or pushing heavy equipment up ramps)	Bodily reaction – injuries resulting from bending, climbing, loss of balance and slipping without falling	Use of dollies to eliminate manual material handling tasks, use of portable lighting to increase visibility at job site, ergonomic reviews of work, effective supervision at the job site, training	N	2	2	3	4	48	Increase the number of ergonomic reviews of vacuum system work	N	2	2	3	3	36	25%
Equipment Setup (Climbing on RHIC cryostats)	Falls to lower level, such as falling from a ladder or over a railing	Fall protection for work above 4 feet, training, selecting the right ladder for the job, inspecting the ladder, climbing and descending the ladder properly	N	2	2	5	2	40	Develop an improved fall protection program	N	2	2	4	2	32	20%
Equipment Setup (Temporary lighting stands can fall over, equipment on wheels can roll into people)	Being struck by an object, such as a tool falling on a worker from above	Hardhats, safety glasses, wheel locks, work planning	N	2	2	3	2	24								

Equipment Setup (Removing heating tapes from boxes and applying them to beam line)	Fiberglass dust from heater tapes	Ventilation of the work area, gloves and tight fitting clothing to help prevent skin exposure problems by reducing direct contact with glass fibers, dust masks to help prevent or reduce the inhalation of small fiberglass particles, goggles that fit properly to prevent eye irritation.	N	2	2	2	4	24	Determine the size of fiberglass particles to ensure dust masks offer adequate protection for lungs							
Equipment Setup (Contact with energized conductors in ion pumps, transformers, power distribution circuits)	Electrocution	Electrical safety training, written procedures for setting up transformers and heating elements; bake-out equipment meets UL or equivalent testing standards	N	2	2	5	2	30									
Bake Out (Contact with temporary task lighting, contact with heating elements)	Contact with temperature – extremes that result in such injuries as heat exhaustion, frost bite or burns	Heating blankets and foil cover the heating elements, posted signs that state “Bake Out In Progress”	N	2	2	2	3	24									
Bake Out (Working in Booster Radiation Area)	Ionizing radiation exposure	Work planning, use of time, distance and shielding to reduce exposure, ALARA review of high dose jobs, RWP	N	2	2	1	2	8									
Equipment Setup and Bake Out (In Booster)	Being struck against an object - cuts and skin abrasions from working in tight spaces	Knee and elbow pads, steel-toe shoes, gloves, work clothing	N	2	2	3	4	48	Increase the number of ergonomic reviews of vacuum system work	N	2	2	3	3	36	25%
Further Description of Controls Added to Reduce Risk:																	

*Risk:	0 to 20	21 to 40	41-60	61 to 80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable